

ABSTRACT OF THE DISCLOSURE

Systems and methods are described for CDMA pilot channel tracking for synchronization. A method of tracking a pilot channel includes: downconverting the RF signal to a low frequency that is of the order of, but greater than the chip rate; converting the signal into digital format; computing complex correlations between the received digital signal and local replicas of the PN codes; and establishing from the correlation values what is the nominal frequency error of the local oscillator. The systems and methods provide advantages because pilot signal tracking accuracy is improved, computational load is reduced without any degradation in performance, and the technique is simple enough to be incorporated in an off-the-shelf FPGA.

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